

Application Serial No. 10/576,006
Reply to final office action of December 10, 2009

PATENT
Docket: CU-4773

Amendments to the Claims

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. **(currently amended)** An apparatus for repeating a downlink signal from a satellite to a mobile station in a shadow area, the apparatus comprising:
 - a receiving unit for receiving the downlink signal and amplifying the received downlink signal from the satellite;
 - a radiating unit for radiating the amplified downlink signal to the shadow area;
 - and
 - a feeding unit for feeding the amplified downlink signal to the radiating means, wherein the radiating unit comprises:
 - a symmetrical dual transmitting antenna provided with a first microstrip patch array antenna and a second microstrip patch array antenna; and
 - a divider for dividing the amplified downlink signal to a first portion and a second portion, and passing the first portion to the first microstrip patch array antenna and the second portion to the second microstrip patch array antenna,where the dual microstrip patch array antenna is used only as a transmitting antenna,

wherein the dual microstrip patch array antenna is formed asymmetrically to the divider for only radiating the downlink signal in the shadow area for maximizing the downlink signal received by the mobile station in the shadow area, and

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wherein the radiating downlink signal received by the mobile station is adjustable from any changes to the shadow area and a direction the mobile station travels.

2. (previously presented) The apparatus of claim 1, wherein the receiving unit comprises:

a microstrip patch array antenna for receiving the signal from the satellite; and
an amplifier for amplifying the received signal from the microstrip patch array antenna.

3. (previously presented) The apparatus of claim 2, wherein the radiating means unit is installed in the shadow area.

4. (previously presented) The apparatus of claim 2, wherein the microstrip patch array antenna and the amplifier are implemented as one piece and further comprises a probe for transiting the signal received from the microstrip patch array antenna to the amplifier.

5. (cancelled)

6. (original) The apparatus of claim 5, wherein the shadow area is an overpass.

7. (previously presented) The apparatus of claim 1, wherein the receiving unit is

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located at a position where a line of sight to the satellite is secured.

8. (cancelled)

9. (previously presented) The apparatus of claim 1, wherein the shadow area is an underpass.

10. (previously presented) The apparatus of claim 8, wherein the first microstrip patch array antenna and the second microstrip patch array antenna are coupled by a hinge to tilt a radiation angle of the symmetrical dual transmitting antenna.